

Region 8



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EPI-WATCH

The Epidemiology Newsletter for Region 8

*Region 8: Benton-Franklin Health District, Klickitat County Health Department,
Walla Walla County Health Department, Yakima Health District*

Hot Topics in Communicable Disease

Norovirus Outbreak at Eastern Washington Camp

A laboratory confirmed outbreak of gastrointestinal illness caused by Norovirus infection occurred at a camp facility in Columbia County, WA in a group of attendees from Kiona-Benton (Ki-Be) school district, Benton City, WA. Initial cases were identified at the end of April, 2004. An epidemiology and environmental investigation was conducted in May 2004 to evaluate and identify potential exposure sources to Norovirus among the camp attendees.

Background Information on Norovirus

Norovirus, formerly known as Norwalk-Like Virus, are a group of viruses that cause a sudden onset of gastroenteritis with a short duration (typically 24-48 hours). Symptoms include nausea, vomiting, diarrhea, headache, and malaise. The incubation period is generally 24-48 hours, with a range of 10 to 50 hours. Noroviruses are very contagious and can spread easily from person to person. Both stool and vomit are infectious. People infected with norovirus are contagious from the moment they begin to feel ill to at least three days after recovery; some people may be contagious for as long as fourteen days after cessation of symptoms. The most serious health effect is dehydration, especially among young children, the elderly, and the sick.

The following control measures can reduce the transmission of Norovirus infection:

- Practice effective handwashing.
- Carefully wash fruit and vegetables.
- Flush or discard any vomitus and/or stool in the toilet and make sure that the surrounding area is kept clean.
- Thoroughly clean and disinfect contaminated surfaces immediately after an episode of illness by using a 1:9 solution of bleach to water.

Outbreak Investigation

As previously mentioned, a public health investigation was initiated by the Benton-Franklin Health District (BFHD) and the Region 8 Public Health Emergency Preparedness and Response (PHEPR) staff. A total of 48 attendees at Camp Wooten, located in Columbia County, WA, from Kiona-Benton City (Ki-Be) School District, Benton City, WA, were identified and became ill with signs and symptoms meeting the outbreak-specific case definition:

Attendee from Kiona-Benton City School District, Benton City, WA at Camp Wooten between 26 April and 29 April 2004 AND ill with fever, diarrhea (3 or more loose bowel movements in 24 hours or less), abdominal cramping or pain, nausea or vomiting between 25 April and 3 May 2004.

An unmatched case-control study was initially designed, using data obtained from the outbreak questionnaire via telephone interviews. Cases were ill individuals meeting the case definition and the controls were well individuals from Ki-Be School District who attended Camp Wooten between 26 April and 29 April 2004. Cases were identified by the Ki-Be School District and the Benton-Franklin Health District (BFHD). The questionnaire was designed to gather information on a variety of potential exposures to Norovirus infection at the camp, including group activities and shared meals.

Interviews began on 30 April and continued until 5 May 2004 with a total of 21 cases interviewed (9 females and 12 males). BFHD did not receive a list of well attendees, or controls, to interview until a week after the initial cases were identified. Therefore, it was decided to do a case series review of the interviewed attendees to evaluate descriptive epidemiological data rather than continue with the case-control study.

Benton-Franklin Health District's Environmental Health (EH) and Communicable Disease (CD) sections, in coordination with the Region 8 PHEPR team, interviewed faculty and staff of the Kiona-Benton Middle School. Environmental Health Sanitarians interviewed the kitchen staff to evaluate food preparation procedures and obtain a menu of the meals provided. Region 8 PHEPR and BFHD CD staff reviewed student activities and student/cabin placement with school district officials.

Conclusions

The information gathered from the Norovirus outbreak investigation pointed to two routes of transmission: person-to-person or an environmental exposure. While either mode of transmission is plausible, with the absence of controls to use as a comparison group in a case-control study, the source of transmission can be surmised to be person to person based on the descriptive epidemiological data (figures 1 & 2). Positive laboratory confirmation of Norovirus in stool samples submitted to the Washington State Department of Health Laboratory (DOH-EPI lab, Shoreline, WA) was received on May 7, 2004.

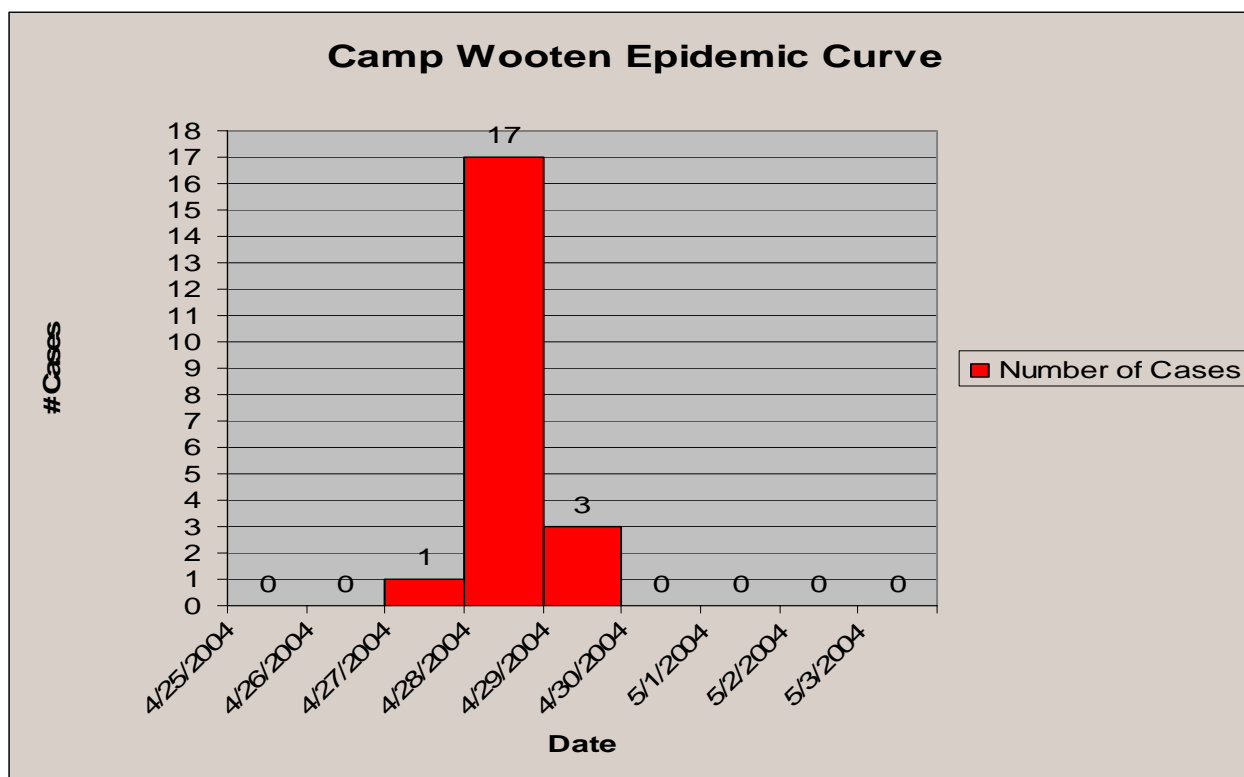


Figure 1. Epidemic curve showing number of cases vs. illness onset date. Typically, the incubation period of Norovirus is 24-48 hours. It can be estimated from the curve that the likely exposure period was 26 April.

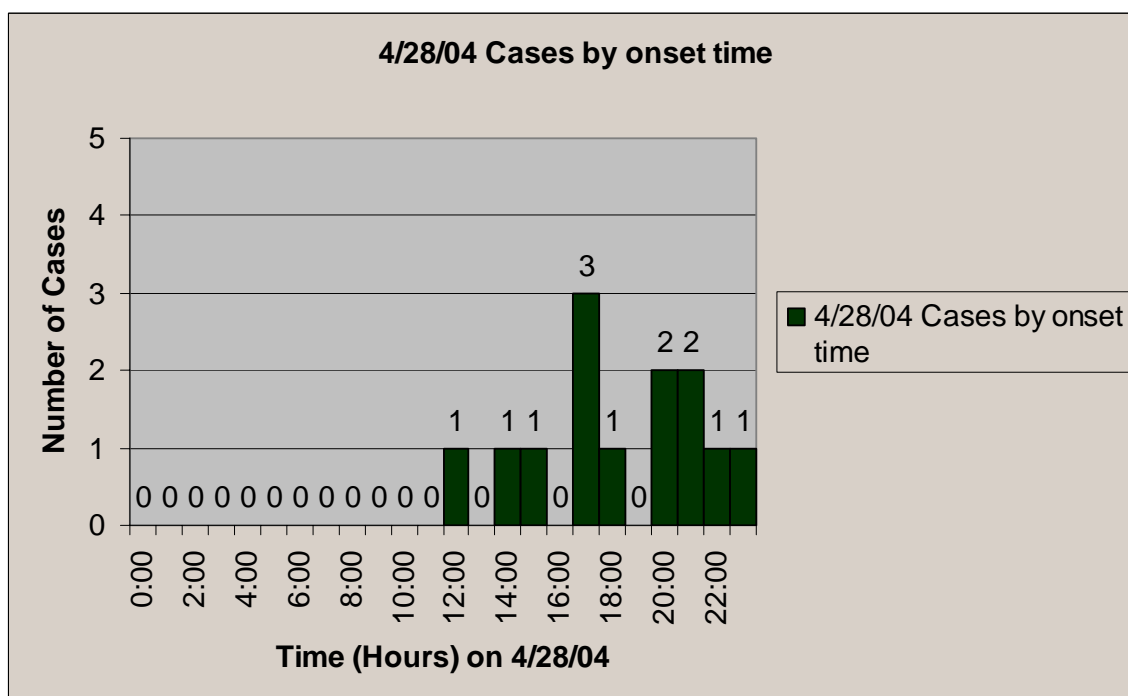


Figure 2. Epidemic curve of number of cases vs. illness onset time on 28 April 2004.

Online Resources

Benton-Franklin Health District:

<http://www.bfhd.wa.gov/base/index.php>

BFHD Communicable Disease Statistics:

<http://www.bfhd.wa.gov/bio/epi.php>

Klickitat County Health District:

<http://www.klickitatcounty.org/health/>

Walla Walla County Health District:

<http://www.co.walla-walla.wa.us/Departments/health/health.htm>

Yakima Health District:

<http://www.co.yakima.wa.us/health/default.html>

Washington State Department of Health:

<http://www.doh.wa.gov/>

WSDOH Notifiable Conditions:

<http://www.doh.wa.gov/Notify/list.htm>

For further information and for requests on obtaining this newsletter, comments, and article submission, please contact:

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